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THE SCIENTIFIC LEGACY OF ORIENTAL SCHOLARS IN THE DEVELOPMENT OF MATHEMATICAL SCIENCE

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Abstract: A student who is good at math will have amathematics—under—the—pseudonym—Burbaki high level of analytical and logical thinking. It develops the developed the idea, defining it as "Mathematics is the ability to make quick decisions, discuss and negotiate, and doscience of mathematical structures." Although this things step by step, not only in solving examples and problems approach—was broader and more precise than but also in different situations in life.

previous definitions, it was still limited—

Key words: Mathematics, development, calculations relationships between structures (eg, mathematics, formulas, integral calculus, numbers.

series theory, algebraic topology), applied and

Introduction

srelationships between structures (eg, mathematics, series theory, algebraic topology), applied and applied theories, and mathematical models in physics, engineering, and social sciences did not fit

Because the first object was a number, it was often referred nto this definition. In the last century, there has to as the "science of arithmetic" (in today's mathematicsbeen a very deep relationship between the various calculations, even operations on formulas, play a very smallmathematical objects, and the results based on this role). Mathematics is one of the oldest sciences, with a longhow that they will play a key role in the further history of development, and at the same time, "What isdevelopment of mathematics. Along with electronic mathematics?" The answer to this question has also computing, the expansion of the application of changed and deepened. In Greece, mathematics was mathematics (biometrics, sociometry, econometrics, understood as geometry. In the IX-XIII centuries, thepsychometry, etc.) and the rapid penetration of concept of mathematics was expanded by algebra and mathematical methods into various spheres of life trigonometry. After analytical geometry, differential, andhave expanded the subject of mathematics beyond integral calculus became central to mathematics in the 17th comprehension. Thus, mathematics is a science that and 18th centuries, it was defined as "the science of studies axiomatic theories and mathematical models, quantitative relations and spatial forms" until the earlythe relationships between them, and draws twentieth century. In the late 19th and early 20th centuries conclusions based on rigorous logical observations. objects of various geometries (such as LobachevskyThematic knowledge, which originally began with geometry, projective geometry, Riemannian geometry)simple numbers and the arithmetic operations on algebras (such as Bull's algebra, quaternion algebra, Kelly'sthem, has expanded and deepened along with algebra), and infinite-dimensional spaces were very diversaniversal progress. Even in the earliest written in content, often artificial objects. and the above definition ources (e.g., mathematical papyrus) there are of mathematics is too narrow.

During this period, as a result of the formation of a unique style and language of observation based on mathematical logic and set theory, the idea that the most important feature in mathematics is strict logical observation (J. Peano, G. Frege, B. Russell, D. Hilbert). In the mid-20th century, a group of French mathematicians who revised the definition of

examples of operations on kayers and the solution of linear equations. Irrigated agriculture, the development of architecture, and the increasing importance of astronomical observations led to the accumulation of evidence for geometry.

For example, in ancient Egypt, a triangle with sides of 3, 4, and 5 units was used to be a right angle. The greatest achievements of the mathematics of this



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period can be seen in the example of the rule for calculating the volume of a regular rectangular truncated pyramid (in the present case, V— (a2 + ab + b2) corresponds to the formula L / 3) and the approximate value of l = (16/9) 2.

The Uzbek statehood, which has deep historical roots dating back more than three thousand years, has undergone many ups and downs. The emergence of developed countries as a result of the formation of the oldest state associations, the rapid

In Greece, it was discovered that geometric properties could evelopment of the culture of the peoples of be found not only through observation and experiment, but Central Asia as a result of the relations of these also from known properties, and the idea of deductive proof ountries with the West and the East through the was developed (Fales, Pythagoras, etc.). The culmination of Great Silk Road have long fascinated scientists. has this idea was the axiomatic construction of geometry inbeen intriguing since. Central Asia, including Euclid's Fundamentals. This book had a great influence on Uzbekistan, is a region with its own place and the further development of mathematics and was a modepotential as one of the regions where human for the perfection of logical expression until the beginning of civilization is established. Our ancestors, who laid the 19th century. The Greeks equated mathematics withind developed the first foundations of modern geometry and elevated it to the level of art. As a resultscience in their time, have carefully studied from planimetry and stereometry have reached a much moræncient times the thinking, ideas, discoveries and perfect level. The existence of only 5 different convexwisdom created by the peoples of the West and the regular cubes (Plato), the lack of a common dimension with East. It is no coincidence that in the Middle Ages, the side of the square (Pythagoras), the concept of numbers the phrase "Light radiates from the East" appeared based on the theory of proportions (Eudoxus), then the West. In ancient Turan, the scientific, calculation of the face and length of curved shapes by piritual and spiritual power was so strong that it The study of conical sections (Apollonius could not be destroyed by various invasions, Pergayos), sterographic projections (Ptolemy), geometriaggressions and evils. Even in such circumstances, constructions, and various curves in this regard gives an ideasur ancestors have preserved and further enriched of the level of development of Greek geometry. The the rich cultural, spiritual and scientific heritage of problems of angle trisexation, cube doubling, squarenational values and traditions. In these glorious squaring, and regular polygons posed by Greek scientistsdays, we proudly mention the sacred names of our were solved by the 19th century, and the problem of perfectancestors, who left a great legacy in the freedom of and "friendly" numbers remains open. Greek Mathematicsthe country and the happiness of the people, the in particular, was far ahead of its time in Archimedes'development of science and culture. Because the research, using the ideas of integral calculus and the centerscientific heritage they have left us is a spiritual of gravity. Greek scholars also had early knowledge of property, and this rich heritage reflects the trigonometry (Hipparchus, Ptolemy), and DiophantusInterests of all mankind. If we look at the pages of Arithmetic dealt with the theory of numbers. At the sameour past history, we can see the works of our great time Mathematics flourished in Ancient China and India assncestors, who studied the civilization of not only well. The Chinese source "Nine Books of Mathematics" (II-bur people, but also the countries of the world and centuries BC) provides rules for deriving squares and cubeswrote about their history and culture with respect from natural numbers. Later, Chinese scientists used thand dignity. This means that the development of system of linear equations and the theory of deductions, inscience and culture is not a choice of the people, but particular, the "Chinese theorem on residues." In the 5than important educational factor in ensuring the century, Szu Chun-chji showed that the number p rangedmutual understanding of peoples. The content and from 3.1415926 to 3.1415927. scope of the scientific heritage of the great Eastern

scholars is that this heritage still serves as an



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important source for new scientific research, without losing its scientific and practical significance. The great thinker Abu Rayhan Beruni's book, India, is one of the most complete works on India of all time, and it is a source of research today. Our great ancestors have made a worthy contribution to human civilization with their scientific heritage. The scientific world of the East and the West is united and developed in harmony. Our scientists have benefited not only from the scientific achievements of Asia, but also from the scientific achievements of foreign thinkers, with a special emphasis on their further enrichment. In addition to their work in the fields of science, our great scholars wrote in ancient Greek, such as Aristotle, Ptolemy, Euclid, Democritus, Socrates, Pythagoras, Galen. mathematics, philosophy, medicine, geography, astronomy. who have translated hundreds of his finest works into Arabic and Syriac. translations and their works played an important role in the formation and development of the science of the Ancient East. From a young age, our great scholars realized very early that true science requires knowledge of several languages, and therefore studied Arabic, Hebrew, Persian, Assyrian, Greek, and Sanskrit in addition to their mother tongue.

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SEARCH RKS

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